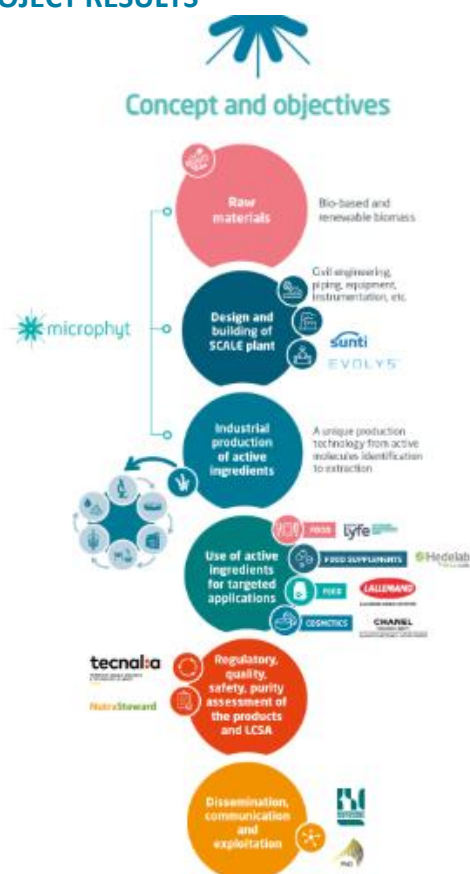


The SCALE Project successfully concludes: A major milestone for Sustainable Microalgae Industrialization in Europe

BIOECONOMY | INDUSTRIAL INNOVATION | MICROALGAE | SCALE PROJECT

After four years of collaborative effort, the SCALE Project is reaching its conclusion. Bringing together 11 European partners from 4 countries, the SCALE project proudly marks the completion of a major phase in its mission to scale up a sustainable European value chain for high-value ingredients derived from microalgae. Coordinated by Microphyt, SCALE has paved the way for the industrial deployment of innovative solutions targeting the food, food supplements, feed, and cosmetics sectors.

PROJECT RESULTS



Industrial achievements: A demonstration plant reaching new heights

At the heart of the project is Microphyt's new industrial facility in Baillargues, France—equipped with a proprietary, large-scale photobioreactor technology. The plant has successfully entered its ramp-up phase, reaching record levels of biomass productivity in recent months. These results confirm the robustness and scalability of Microphyt's sustainable production model. Several new ingredients are already being produced and introduced to the market, meeting demands for natural, effective, and eco-friendly solutions.

Flagship Plant: Building a new era in Microalgae production



1. Visit to the Microphyt site during the Symposium in September 2024



2. Solar panels for self-consumption

The SCALE flagship plant is a cutting-edge facility producing bioactive ingredients from microalgae. Spanning 5,000 m², it features advanced cultivation and processing systems that ensure high-quality, sustainable output. Fully operational since completion, the plant meets FSSC 22000 food safety standards and adheres to the highest cosmetic quality benchmarks, including all cosmetic ingredients being COSMOS approved, guaranteeing both safety and excellence in applications for health and skincare.

Techniques like freeze-drying and optimized extraction ensure product purity and effectiveness. Sustainability is central to operations, with ongoing efforts to reduce energy and water use. Solar panels and advanced wastewater treatment support environmental goals, alongside new initiatives for greater efficiency. Future plans include recycling growth media to further enhance sustainability. SCALE marks a key achievement in sustainable biotech, delivering innovative, natural health and cosmetic solutions.

KEY INNOVATIONS: BREAKTHROUGH INGREDIENTS FROM MICROALGAE

SCALE has led to the development and validation of several bioactive ingredients, designed for various health and wellness applications. Among them:

- Ingredients for food supplements market:
 - [PhaeOptim™](#): From *Phaeodactylum tricornutum*, this patent-pending ingredient enhances exercise benefits. A 12-week clinical trial showed significant improvements in cardiovascular capacity, bone health, and exercise capacity in women taking 220 mg daily. A natural support for active lifestyles.
 - [BrainPhyt™](#): Clinically validated and sustainably produced in France, this ingredient supports cognitive function and stress management. Backed by two peer-review and published studies, it contains fucoxanthin, omega-3s, and phycoprostanes, making it a powerful ingredient for food supplement formula targeting cognitive health.
- Ingredients designed for cosmetic market:
 - [DunaPure™](#): Sourced from *Dunaliella tertiolecta*, this cosmetic active purifies, soothes, and reduces marks for clear skin. Rich in lutein and marine sterols, it offers gentle yet effective care for blemish-prone skin.
 - [Luteana™ Scalp](#): Made with *Tisochrysis lutea*, this active restores scalp health and combats dry dandruff with DHA and fucoxanthin. A gentle, natural solution for sensitive scalps.

ZenGut™: Latest innovation from Microphyt for intestinal balance and mental well-being



ZenGut™ is gaining strong traction in the nutraceutical market after receiving FDA New Dietary Ingredient (NDI) approval, paving the way for its entry into the U.S. market. Clinically validated in a double-blind, placebo-controlled trial, ZenGut™ supports gut health, relieves digestive discomfort, and enhances mental well-being by acting on the gut-brain axis. All of this only after 4 weeks and with a low daily dose supplementation.

Sustainably sourced from *Tetradesmus obliquus* and produced in France using patented hydro-biomimetic technology, ZenGut™ meets growing demand for natural, holistic solutions connecting digestive and emotional health.

- *FDA NDI-approved*: A key milestone enabling commercial launch in the U.S.
- *Dual-action efficacy*: Targets both digestive comfort and emotional balance through the gut-brain axis.

Collaboration in action: The strength behind SCALE's success

The success of the SCALE project is rooted in the powerful collaboration of 11 expert partners, each contributing specialized knowledge across the entire value chain. Together, they've turned pioneering microalgae innovations into tangible, real-world applications.

- CHANEL PARFUMS BEAUTE assessed the safety and efficacy of new cosmetic actives, identifying benefits in anti-aging, hydration, and skin barrier support—paving the way for skincare launches by 2028.
- Hedelab led formulation work, ensuring microalgae ingredients perform effectively in various food supplement formats, from lab to pilot scale.
- Lallemand explored algae co-products in animal nutrition, validating their potential in pet and aquaculture feeds through feed trials.
- Meanwhile, the LYFE Institute created culinary prototypes using BrainPhyt™, co-developing recipes with chefs for seniors, athletes, and wellness markets.

This multidisciplinary teamwork showcases how combining expertise from diverse fields can transform cutting-edge science into practical, sustainable solutions that benefit both people and the planet.

Raising awareness among the industrial and academic community through two specialized workshops

As part of its open innovation approach, SCALE hosted two key workshops focused on cosmetics and nutrition applications.

- The first, held in Montpellier in September 2024, brought together over 50 professionals to explore marine biomimetics and sustainable beauty solutions inspired by microalgae.
- The second took place at Vitafoods Europe 2025 in Barcelona, within the Algae Pavilion, and highlighted SCALE's latest advances in microalgae-based nutraceuticals.

These events connected science with market expectations, encouraging dialogue between researchers, industry players, and innovators across Europe.

- 50+ industry experts engaged in sustainability-driven innovation.
- Presence at Vitafoods Europe, a global nutraceutical benchmark, boosted project visibility.

Promoting innovation across Europe and beyond

SCALE has actively promoted its innovations in microalgae-derived ingredients through participation in over a dozen major events across Europe and beyond. From Brussels to New York, the project showcased its breakthroughs via booths, presentations, and workshops targeting scientific, industrial, and public audiences. Key highlights include dual representation at the CBE JU Stakeholder Forum in Brussels, a scientific showcase at AlgaEurope 2023 in Prague, and a dedicated presentation of the first deliverable from the partnership with Institut Lyfe at the European Algae Industry Summit 2023 in Lisbon. SCALE also demonstrated strong industry engagement at BIOKET, In Cosmetics, and Cosmetic 360. While international visibility was established during the 2022 editions of NYSCC Supplier's Day in New York and 2023 Vitafoods Europe in Geneva. A standout moment in 2025 was SCALE's prominent presence at Vitafoods Barcelona, with a fully dedicated booth at the Algae Pavilion, a first that underscored the project's growing influence in the international nutraceutical arena. The year also saw SCALE actively contribute to major sustainability gatherings, including Biomim'expo and the Greener Manufacturing Conference, reinforcing its commitment to responsible innovation.

What's Next for SCALE?

With the successful completion of the SCALE project, momentum is building for what comes next. Project partners are already engaged in new industrial and scientific collaborations to unlock further applications of microalgae in nutrition, wellness, and sustainable innovation.

To ensure continued access to knowledge generated through SCALE, the project's website will remain online for at least two more years. It will feature open access to key results, engaging video content, and a virtual showroom spotlighting breakthrough innovations and partner contributions.

Looking ahead, a major milestone will be the official inauguration of Microphyt's new high-tech production facility in Baillargues next month, a significant leap forward in scaling microalgae-based technologies in Europe and advancing industrial biotechnology.

About SCALE Project

The SCALE project strives to build and operate a first of its kind Flagship plant producing ingredients with high nutritional value derived from the untapped microalgae diversity, for food, food supplements, feed and cosmetics sectors, through economically-sound processes and in an environmentally friendly way. This flagship plant scale-up the microalgae production process from demonstration scale to Flagship industrial scale with an annual production of more than 100 tons of high-value ingredients, and will be located in Baillargues, near Montpellier (South of France). SCALE brings together 11 renowned partners from 4 European countries at different stages of the value chain. The project will be carried out over 48 months, from June 2021 to May 2025, with an overall budget of €24.7M including €15M funding from the European Union's Horizon 2020 research and innovation program and the Bio-Based Industries Consortium.

More information: <https://www.scaleproject.eu/> ; <https://www.cbe.europa.eu/>

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